SCIENCE
Eighth Grade

LIFE SCIENCE STANDARDS

Interactions Between Living Things and Their Environment

The student will investigate how living things interact with one another and with nonliving elements of their environment.

Key	Reporting Category		Project WET Activity
D		Characterize the major biomes according to specific environmental features and identify the organisms commonly found in these areas.	
A	**IL**	Distinguish among commensalisms, parasitism, and mutualism.	
A	**IL**	Identify the earth's major biomes.	
A	**IL**	Choose the appropriate biome for an organism, given a description.	Water Address, 122 Salt Marsh Players, 99
A	**IL**	Identify biotic and abiotic factors in a biome.	

Heredity and Reproduction

The student will understand the basic principles of inheritance.

A	**HR**	Differentiate between complete and incomplete metamorphosis.	
A	**HR**	Distinguish between sexual and asexual methods of reproduction.	
		Use the results of a test cross to distinguish between dominant and recessive traits.	
A	**HR**	Differentiate between dominant and recessive traits.	
A	**HR**	Predict the genotypes of offspring in a monohybrid cross using a punnett square.	
I		Draw or construct a model representing the relationship among DNA, genes, and chromosomes.	
A	**HR**	Select models or illustrations that are representations of DNA.	
A	**HR**	Associate a change in a DNA molecule with a mutation.	
A	**HR**	Identify types of genetic engineering (i.e., gene splicing and cloning) and evaluate the impact of genetic engineering on society.	
I		Construct a simple model that represents the basic process by which reproductive cells are produced (meiosis).	
I		Research and present information on careers related to biotechnology.	Wet Work Shuffle, 360

Diversity and Adaptation Among Living Things

The student will understand that living things have characteristics that enable them to survive in their environment.

A	**DA**	Identify similarities and differences among organisms.	
A	**DA**	Classify plants and animals into groups according to their features.	
A	**DA**	Infer the relatedness of different organisms.	
A	**DA**	Use a simple classification key to identify an unknown organism.	
A	**DA**	Determine the genus and species of an organism using a dichotomous key.	

KEY
I = Introduced D = Developing A = State Assessed M = Mastered

REPORTING CATEGORY
CS = Cell Structure & Function FP = Food Production & Energy HR = Heredity & Reproduction
AC = Atmospheric Cycles SP = Structure & Properties

Note: "A" indicates the state curriculum (CRT) assessment only.
All the skills ("I"…"D"…"A"…"M") are addressed in the classroom assessment.

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EARTH SCIENCE STANDARDS

Earth Features

The student will understand that the earth has many geological features that are constantly changing.

D		Differentiate among earth layers according to their physical properties.	
A	**EF**	Label a cross section of the earth.	
D		Illustrate the major plate boundaries.	
A	**EF**	Identify the major plates of the world.	
A	**EF**	Deduce plate movements as the major cause of geological events.	
D		Compare and contrast processes that shaped the earth in the past with those shaping the earth today (e.g., plate movements, human activity, and mountain building).	
A	**EF**	Recognize the relationship between continental drift and plate tectonics.	

Earth Resources

The student will investigate the properties, uses, and conservation of earth's resources.

A	**ER**	Distinguish between renewable and nonrenewable resources.	Sum of the Parts, 267
D		Distinguish among common minerals found in rock samples using test kits, descriptive charts, etc.	
A	**ER**	Identify rocks and minerals given a table of physical properties.	
D		Describe how various minerals are used.	
		Label a diagram depicting the processes of the rock cycle.	
A	**ER**	Identify factors that cause rocks to break down.	
A	**ER**	Distinguish among sedimentary, igneous, and metamorphic rocks and interpret a simple rock cycle diagram.	Great Stony Book, 150
M		Explain how fossils are used to understand the earth's past.	Old Water, 171
A	**ER**	Infer that human activities may be helpful or harmful to the environment.	Sum of the Parts, 267 Dilemma Derby, 377
D		Research how technological advances have impacted the environment (e.g., the use of fertilizers, and fossil fuels).	
A	**ER**	Identify various energy sources.	Energetic Water, 242
D		Analyze aspects of energy consumption by society.	
D		Evaluate the effectiveness of various conservation strategies on the earth's energy and natural resources.	Humpty Dumpty, 316

PHYSICAL SCIENCE STANDARDS

Forces and Motion

The student will investigate the effects of force on the movement of objects.

D		Determine the speed of an object based on the distance and amount of time traveled.	
D		Differentiate between speed and velocity.	
A	**FM**	Recognize that forces cause changes in speed and/or direction of motion.	

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A	**FM**	Solve problems pertaining to distance, speed, velocity, and time given illustrations, diagrams, graphs, or scenarios.	
D		Describe how Newton's three laws of motion explain the movement of objects.	
A	**FM**	Recognize the relationship between mass, force, and acceleration.	
A	**FM**	Identify Newton's three laws of motion and relate the first two laws to the concepts of inertia and momentum.	
D		Distinguish between mass and weight.	
D		Describe the relationship among distance, size, mass, and gravitational force of objects.	
A	**FM**	Identify the relationship between the mass of objects, the distance between them, and the amount of gravitational attraction.	
D		Differentiate among the six types of simple machines and their applications.	
A	**FM**	Identify simple machines.	
A	**FM**	Choose the most appropriate simple machine to use for a specific task.	

Interactions of Matter

The student will investigate the interactions of matter.

D		Determine whether a substance is an acid or base using an indicator.	
A	**IM**	Identify substance as an acid or a base, given its pH.	
A	**IM**	Distinguish between physical and chemical changes.	
		Recognize that oxygen, in combination with another substance, results in a chemical change.	
D		Identify the reactants and/or products in a chemical change.	
		Explain why the mass of the reactants is the same as the mass of the products during a chemical change.	
A	**IM**	Recognize that the mass of the reactants is the same as the mass of the products, given simple chemical equations.	
		Describe how variables such as temperature and concentration affect the rate of reaction.	
A	**IM**	Determine how temperature and concentration might affect the rate of chemical reactions.	
A	**IM**	Classify a reaction as exothermic or endothermic.	

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